California Ocean Resources Management: A Strategy for Action

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California Resources Agency

and the

California Environmental Protection Agency

FOR REVIEW PURPOSES ONLY

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ACRONYMS

BCDC	San Francisco Bay Conservation and Development Commission
BWQW	Beach Water Quality Workgroup
CalCOFI	California Cooperative Oceanic and Fisheries Investigations
Cal/EPA	California Environmental Protection Agency
CalOCEAN	California Ocean and Coastal Environmental Access Network
CalOST	California Ocean Science Trust
CBI	Clean Beaches Initiative
CCC	California Coastal Commission
CCMP	Comprehensive Conservation and Management Plan
CDIP	California Data Information Program
CENCOOS	Central California Ocean Observation System
CZMA	Coastal Zone Management Act
DFG	Department of Fish and Game
LNG	liquefied natural gas
LTMS	San Francisco Bay Long-Term Management Strategy
MLMA	Marine Life Management Act
MLPA	Marine Life Protection Act
MW	megawatts
NEPA	National Environmental Policy Act
NERR	National Estuarine Research Reserve
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPSP	non-point source pollution
OCS	outer continental shelf
PFMC	Pacific Fishery Management Council
SCCAT	Southern California Caulerpa Action Team
SCCWRP	Southern California Coastal Water Research Project
SCOOS	Southern California Ocean Observation System
SCWRP	Southern California Wetlands Recovery Project
SWRCB	State Water Resources Control Board
UC	University of California
UCMC	University of California Marine Council
USC	University of Southern California
USEPA	U.S. Environmental Protection Agency

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EXECUTIVE SUMMARY

INTRODUCTION

Both the U.S. Commission on Ocean Policy and the Pew Oceans Commission have identified an emerging national crisis situation regarding this nation's ocean and coastal resources. On June 4, 2004 Governor Schwarzenegger submitted his comments on the Preliminary Report of the U.S. Commission on Ocean Policy, which documented California's leadership in ocean and coastal management and provided the Governor's call for strong actions at all levels of government to protect and manage these resources. In his comments the Governor stated, "Your report is a wake-up call that the oceans are in trouble and in need of help. In response to this need, actions must take place at the international, national, state, regional and local levels, as these issues are just as important globally as they are to the citizen trying to protect the waters off a local beach." The Governor's comments were clear – action is needed to protect and manage our ocean and coastal resources.

GOVERNOR'S DIRECTIVE

Recognizing the need for strong leadership by the State of California, Governor Schwarzenegger directed Secretary for Resources Mike Chrisman and Secretary for Environmental Protection Terry Tamminen to "develop a plan of action for ocean and coastal management in California." The Governor's directive requires that the Action Plan explore important actions that can be taken by the Schwarzenegger Administration, the legislature, or by partners in industry, academia, public interest groups, and philanthropic interests. At a minimum, this plan is required to address actions that the state can take to address Governance; Economics and Funding; Research, Education and Technology Development; and Stewardship. The Governor directed that this plan be on his desk within 90 days (September 2, 2004).

GENERAL APPROACH

The intent of this Action Plan is to recommend initial actions that the state should pursue to maintain its nationally recognized leadership role in managing and protecting ocean and coastal resources. A substantial amount of information was submitted to the Governor to assist him in his review of the Preliminary Report of the U.S. Commission on Ocean Policy from federal, state and local agencies, industry, academia, non-governmental organizations, the legislature, members of Congress, and the general public. This information was extremely valuable for the preparation of this Action Plan.

The goals of the Plan for leadership are both simple and bold. The Action Plan seeks to:

- increase the abundance and diversity of aquatic life in California's ocean, bays, estuaries, and coastal wetlands;
- make the water in those bodies cleaner;
- provide a marine and estuarine environment that Californians can productively use and safely enjoy; and
- support ocean dependent economic activities.

A HISTORY OF LEADERSHIP

California has been a leader in ocean and coastal management and continues to lead important initiatives for improving the management of fisheries, marine protected areas, water quality, shoreline erosion and coastal development. The need for enhanced ocean and coastal management measures is underscored by the demands of California's growing population, both along the coast and inland. There is a clear need for action to address our current management challenges and those that will be faced by future generations of Californians.

PLAN OF ACTION

California's Ocean Agenda, developed in 1997, set forth a mission to ensure comprehensive and coordinated management, conservation, and enhancement of California's ocean resources for their intrinsic value and for the benefit of current and future generations. This Action Plan builds on California's legacy of leadership by determining how the state can continue to take proactive approaches to ocean and coastal management with a specific emphasis on improving coordination of policy and funding for all ocean and coastal programs, evaluating all relevant California laws and regulations regarding ocean/coastal management, and identifying existing and potential new governance approaches, and recommending how these approaches can be improved and enhanced to address a variety of the state's most pressing issues.

A. GOVERNANCE

Ocean planning and regulation is fragmented at both the federal level and within California resulting in reduced efficiency and effectiveness of efforts to ensure clean water, productive habitats, sustainable fisheries and functioning recreational beaches. Many improvements have been made and successes have occurred in California since these findings were first made in 1997. We need to build on those successes and to address those areas where fragmentation still impedes the implementation of the most effective and efficient approaches. California remains a leader in ocean and coastal management despite these remaining challenges, but improvements can and should be made.

Recommendation 1

The Schwarzenegger Administration should call on the President of the United States and the Council of Environmental Quality to support the major provisions of the final report of the U.S. Commission on Ocean Policy that are acceptable to California and to advocate for other national ocean issues important to California that are not included in the final report. To achieve this coordination and to urge action at the federal level, California should work with other national organizations, schedule a meeting with the President's Council of Environmental Quality to discuss these issues within 30 days of the report's release, and work with the administration and Congress to ensure implementation of important provisions.

Recommendation 2

Continue California's ocean leadership role by establishing a cabinet-level California Ocean Council with a mission to help ensure comprehensive and coordinated management, conservation, and enhancement of California's ocean and coastal resources for their intrinsic value and for the benefit of current and future generations. The council will be chaired by the Secretary for Resources, and include the Secretary for Environmental Protection and the Secretary for the Business, Transportation and Housing Agency at a minimum.

B. ECONOMICS AND FUNDING

There is no accounting system in place in the United States or in California to regularly assess the economic benefits derived from the ocean and coast. In addition, there is no comprehensive evaluation of the levels of investment in California to fund ocean and coastal management and protection programs.

Recommendation 3

Finalize, distribute and make use of the California portion of the National Ocean Economics Project (California's Ocean Economy) to help inform decision makers and members of the public about the economic benefits derived from the ocean and the coast. Some immediate actions include seeking consensus to the degree possible from leading economists from government, academia, the private sector, and the non-governmental community regarding the economic contribution of the ocean to the California and national economies; identifying California's current investment in management; and seeking new sources of federal funding.

C. RESEARCH, EDUCATION AND TECHNOLOGY DEVELOPMENT

Government, academia, industry, and the non-governmental community need to seek consensus (where possible) on the highest priority research and outreach objectives to assist ocean and coastal management needs. It will be important to seek consensus (where possible) on ocean and coastal research priorities for California and then to work with all these entities to obtain the funding, to share resources, and to apply the knowledge gained to real world management challenges.

Recommendation 4

Develop a state-wide ocean and coastal research and outreach strategy with clearly stated priorities for California.

Recommendation 5

Ensure that ocean and coastal education is included in the environmental principles and concepts being developed pursuant to the implementation of the Education and the Environment Initiative (*Pavley, Chapter 665, Statutes of 2003 — AB1548*).

Recommendation 6

Develop an Ocean Observation Master Plan to guide the development of the state's $21 million investment in the Ocean Currents Monitoring System and its integration with other sources of ocean and coastal monitoring and research data.

Recommendation 7

Seek federal grants, or grants from other non-governmental sources, to revitalize the California Ocean and Coastal Environmental Access Network (CalOcean) on the Resources Agency Website to provide access to marine data sets, geographic information systems, electronic documents, information regarding organizations, and marine and coastal news.

D. OCEAN AND COASTAL STEWARDSHIP

The recommendations of the U.S. Commission on Ocean Policy, and the ocean and coastal protection and management needs of the State of California, make a compelling case for ecosystem management approaches. The National Ocean Council recommended in the report of the U.S. Commission on Ocean Policy, and the California Ocean Council recommended in this Action Plan, can provide significant role in developing new ecosystem based approaches to ocean and coastal management.

Recommendation 8

Increase efforts to pursue, support, and fund ecosystem management approaches at the federal and state level to guide the stewardship of ocean and coastal resources. The successful long-term implementation of ecosystem management will require a commitment from the highest levels of both the federal and state government.

Recommendation 9

Strengthen the "California Watershed Management Memorandum of Understanding (MOU)" to identify priority watersheds for resource protection and use, fishery recovery, and water quality, and improve delivery of state technical and financial assistance to impaired coastal watersheds.

Recommendation 10

Integrate coastal water quality programs to improve their efficiency and effectiveness and clean up coastal watersheds, estuaries, bays, beaches, and near-shore waters. The Council will develop an action plan to coordinate state financial and technical assistance programs to facilitate projects and programs that restore and protect coastal and near-shore resources, habitats and water quality.

Recommendation 11

Identify and prioritize ocean and coastal management issues where intervention by the California Ocean Council can help coordinate, expedite, and help fund necessary actions.

California faces ongoing challenges in its efforts to manage and protect marine habitats, living marine resources, and the very existence of beaches. Below are some of the challenges and opportunities that should be considered and prioritized by the Council to help facilitate need management action. Some of the important issue areas include:

HABITATS, LIVING MARINE RESOURCES AND WATER QUALITY

- **California Coastal Management Program.** Key challenges include the need to maintain a strong California coastal management program which is considered to be one of the finest in the nation.

- **Marine Life Protection Act.** Key challenges with the implementation of the MLPA will be to ensure that stakeholders are able to participate in all stages of the effort, it can be coordinated with federal agency processes, and long term funding can be secured to support management efforts.

- **Marine Life Management Act**. Key challenges with the implementation of the MLMA are the requirement for science based management, constituent involvement, development of fishery management plans, and the eventual development of a master plan for comprehensive management approaches.

- **Aquatic Nuisance Species.** Key challenges include the need to support of efforts to eradicate species that have taken hold in California and to complete both the comprehensive aquatic invasive species plan and ballast water management plan for vessels arriving in California ports.

- **Watershed Management.** Key challenges include the need to coordinate California's watershed management programs to ensure that federal, state, and local resources are being used as efficiently and effectively as

possible, while building local capacity for long-term stewardship and working locally to leverage private and non-profit resources.

- **Control of Polluted Runoff (Non-Point Source Pollution).** Key challenges include reducing the impacts of this ubiquitous form of pollution over our large and geographically diverse state, coordinating the efforts of many responsible entities, and evaluating the effectiveness of the program statewide.

- **Clean Beaches Initiative.** The key challenges that lay ahead include: 1) eliminating sewage spills, 2) reducing contaminated stormwater, urban runoff, and marine debris, 3) developing quicker and more cost effective source identification tools. and 4) maximizing the use citizen volunteer organizations. Addressing all of these challenges will require additional levels of funding.

- **Coastal Sediment Management and Coastal Erosion.** Key challenges are to complete the California Coastal Sediment Management Master Plan and to re-evaluate the development of California coastal erosion strategy.

- **Bays, Estuaries, and Coastal Lagoons.** Key challenges include the need to consider our bays, estuaries and coastal lagoons as we evaluate new approaches to ocean and coastal protection and management

MANAGEMENT OF ECONOMIC USES AND INFRASTRUCTURE

- **Ports, Harbors, and Maritime Industries.** Key challenges include the need to assess and permit harbor dredging and filling operations, while ensuring the protection of critical habitats.

- **Fisheries.** Key challenges include responding to the decline of fishery stocks which are substantially stressed and declining, while maintaining others at sustainable levels.

- **Marine Aquaculture.** Key challenges include addressing the impacts of new and larger scale marine aquaculture operations anticipated to be proposed in the coming years.

- **Liquefied Natural Gas Importation.** Key challenges include the need to ensure that any such facilities can be sited consistent with California's strong coastal protection laws, and that the operations can be conducted safely.

- **Coastal Power Plants.** Key challenges include the need to address the impacts of conducting improvements to existing facilities and developing new generating capacity.

- **Offshore Oil and Gas Development.** Key challenges include the need for a long-term solution to the 36 disputed oil and gas lease tracts off the California coast.

- **Tourism and Recreation.** Key challenges include the need to maintain the nationally recognized ocean and coast resources that people come to California to the visit.

- **Saltwater Desalination.** Key challenges will be to determine where these facilities can permitted, consistent with coastal protection laws and water quality standards.

- **Urban Waterfront Restoration.** Key challenges include addressing issues with cleanup of toxic sites, maintenance of historic architectural standards, preserving coastal-dependent industry, and the timing of financing and permitting of the projects under consideration.

INTRODUCTION

Both the U.S. Commission on Ocean Policy and the Pew Oceans Commission have identified an emerging national crisis situation regarding this nation's ocean and coastal resources. Admiral James D. Watkins, the Chair of the U.S. Commission on Ocean Policy, recently stated, "Our oceans and coasts are in trouble, and we as a nation have a historic opportunity to make a positive and lasting change in the way we manage them before it is too late." On June 4, 2004 Governor Schwarzenegger submitted his comments on the Preliminary Report of the U.S. Commission on Ocean Policy, which documented California's leadership in ocean and coastal management and provided the Governor's call for strong actions at all levels of government to protect and manage these resources. In his comments the Governor stated, "Your report is a wake-up call that the oceans are in trouble and in need of help. In response to this need, actions must take place at the international, national, state, regional and local levels, as these issues are just as important globally as they are to the citizen trying to protect the waters off a local beach."

If Californians ask themselves what is at stake, the response is compelling. We need to manage the ocean ecosystems to support all forms of marine life for their intrinsic value and to ensure that economic activities such as commercial and recreational fishing are sustainable now and long into the future. We need to protect water quality so we can continue to safely swim in coastal waters and to ensure that fish are safe to eat. We need to manage the sediment resources that create wide sandy beaches that support tourism and recreation, as well as habitat for shorebirds and other species. Recent polling conducted by the Public Policy Institute of California indicates that Californians have strong concerns about the protection of ocean, coastal and watershed resources. They understand the challenges faced in managing these resources and are willing to support strong actions to protect them. The significant contribution of ocean dependent industry to the state's economy makes a compelling argument that an investment in ocean and coastal management and protection is an investment in the economic well-being of this state. The need for action is clear.

GOVERNOR'S DIRECTIVE

Recognizing the need for strong leadership by the State of California, Governor Schwarzenegger directed Secretary for Resources Mike Chrisman and Secretary for Environmental Protection Terry Tamminen to "develop a plan of action for ocean and coastal management in California." The Governor's directive specifies that this plan of action (Action Plan) shall assess what has changed since the publication of the state's 1997 ocean strategy, *California's Ocean Resources: An Agenda for the Future* (California Ocean Agenda*)*. The Governor's directive requires that the Action Plan explore important actions that can be taken by the Schwarzenegger Administration, the legislature, or by partners in industry, academia, public interest groups, and philanthropic interests. This plan is intended to address the challenges faced by California to protect and manage its watersheds, marine resources, water quality, world-class recreational beaches, and the ocean dependent economic uses that depend on these resources. The Governor directed that this plan be on his desk within 90 days (September 2, 2004).

At a minimum, this plan is required to address:

- ***Governance.*** Actions that can be taken to improve the ocean and coastal governance structure in California and to institute a new era in protecting and managing our ocean and coastal resources with measurable results.

- ***Economics and Funding.*** Actions that can be taken to support adequate funding from a variety of sources for ocean and coastal management activities, and ways in which ocean and coastal dependent industries can function more efficiently.

- ***Research, Education and Technology Development.*** Actions that can be taken to support increased funding for a more robust system of research, education and technology, including the development and implementation of a national integrated ocean observing system.

- ***Stewardship.*** Actions that can be taken to apply the evolving expertise and experience with ecosystem management to all matters dealing with ocean and coastal management in California.

GENERAL APPROACH

The intent of this Action Plan is to recommend initial actions that the state should pursue to maintain its nationally recognized leadership role in managing and protecting ocean and coastal resources**.** A substantial amount of information was submitted to the Governor to assist him in his review of the Preliminary Report of the U.S. Commission on Ocean Policy from federal, state and local agencies, industry, academia, non-governmental organizations, the legislature, members of Congress, and the general public. This information was extremely valuable for the preparation of this Action Plan.

In addition to the extensive written comments received during the U.S. Commission report review, Secretary Chrisman and Secretary Tamminen co-sponsored the May 6, 2004 California Ocean Summit to solicit testimony from 18 experts from throughout California to provide perspectives and recommendations regarding the ocean research and education community, economic interests, and non-governmental organizations. The written comments, combined with the testimony received at the California Ocean Summit, provide an extensive record of the issues that need to be addressed at the national and state level. This Action Plan is intended to help set the stage for moving forward with a new and updated approach in California to ocean and coastal governance, economics and funding, research, education, technology development, and stewardship.

This Action Plan is being put forth at a critical time. Although declines in the abundance and diversity of marine life have recently been documented, enlightened and proactive leadership can help reverse these declines. California is ready to do what it has done successfully so many times in the past − lead the nation. The goals of this Action Plan for leadership are both simple and bold. The Action Plan seeks to increase the abundance and diversity of aquatic life in California's ocean, bays, estuaries, and coastal wetlands; to make the water in those bodies cleaner; to provide a marine and estuarine environment that Californians can productively use and safely enjoy; and to support ocean dependent economic activities.

A HISTORY OF LEADERSHIP

California has been a leader in ocean and coastal management and continues to lead important initiatives for improving the management of fisheries, marine protected areas, water quality, shoreline erosion and coastal development. California chairs the Ocean Policy Committee of the Coastal States Organization and has helped develop state positions at the national level regarding revenue sharing, U.S. ocean policy, research needs, coastal zone management, and other pressing coastal and ocean issues. California served on the team to develop the unified position of coastal states submitted to the U.S. Commission on Ocean Policy. In the past four years, California has provided testimony on national ocean governance at hearings and forums before the U.S. Commission, the Pew Oceans Commission, the National Governors Association, and at the Pacific Islands Ocean Forum urging the adoption of strong protection and management measures. The Resources Agency and California Environmental Protection Agency have also organized two international ocean conferences (California and the World Ocean 1997 and 2002) focusing on the development and implementation of California's Ocean Agenda. The 2002 event included over 950 attendees with representatives from throughout the United States and six other nations.

The need for enhanced ocean and coastal management measures is underscored by the demands of California's growing population, both along the coast and inland. Approximately 34 million Californians were counted in the 2000 census; however, new data from the California Department of Finance indicates that the state is projected to pass the 40 million mark in 2012, and to top 50 million people by 2036. Population growth, and the attendant development of residential, industrial, commercial and recreational facilities, will undoubtedly place additional stress on ocean and coastal ecosystems. There is a clear need for action to address our current management challenges and those that will be faced by future generations of Californians.

PLAN OF ACTION

California's Ocean Agenda has set forth a mission to ensure comprehensive and coordinated management, conservation, and enhancement of California's ocean resources for their intrinsic value and for the benefit of current and future generations. California has led the way for many advancements in governance, economic assessments, research, education, and new approaches to fisheries, marine managed areas, shoreline erosion, habitat protection and other issues. This Action Plan builds on this legacy by determining how California can continue to take proactive approaches to ocean and coastal management with a specific emphasis on improving coordination of policy and funding for all ocean and coastal programs, evaluating all relevant California laws and regulations regarding ocean/coastal management, and identifying existing and potential new governance approaches, and recommending how these approaches can be improved and enhanced to address a variety of the state's most pressing issues

While this Action Plan responds to the Governor's directive to address governance; economics and funding; research, education, and technology development; and stewardship, it is important to note that these issues are all interrelated. For example, California can have the best system of governance in the world, but absent the science to support decisions, the funding to support these efforts, and a clear understanding of the stewardship needs of coastal and ocean resources we will have made little progress.

A. GOVERNANCE

The Governor's comments on the Preliminary Report of the U.S. Commission on Policy focused on the degree of fragmentation, duplication, and confusion that is present in the federal system of ocean and coastal governments. The Governor concurred with recommendations to elevate ocean governance issues at the federal level and to provide the most effective and efficient ways to coordinate agency actions that are both necessary and warranted. It is clear that California must pursue similar actions at the state level to improve the comprehensive and coordinated management, conservation and enhancement of its ocean and coastal resources. This Action Plan is a first step in that process.

Governance Analysis

Ocean planning and regulation is fragmented at both the federal level and within California resulting in reduced efficiency and effectiveness of efforts to ensure clean water, productive habitats, sustainable fisheries and functioning recreational beaches. The fragmentation at the federal level has been documented in the reports of the U.S. Commission on Ocean Policy and the Pew Ocean Commission. Of primary importance to the future of California ocean management is the ability of the federal government to make needed reforms that improve access, accountability and responsiveness to management efforts at the state and local levels.

Fragmentation at the state level was well documented in the California Ocean Agenda in 1997, as well as in more recent findings and analyses. Authority for ocean and coastal management

is currently included in a variety of statutes located in seven different California codes: Fish and Game, Government, Harbors and Navigation, Health and Safety, Penal, Public Resources, and Water. Statutes crisscross various code sections to achieve a variety of single-issue purposes, but their historic development on an incremental basis has led to a body of law lacking cohesion. This fragmented approach often results in confusion over agency roles and responsibilities, making it difficult for ocean users and government regulators to understand legal requirements relating to a specific issue. Many improvements have been made since these findings were first made in 1997. Legislation and administrative initiatives have provided badly needed coordination of many programs and our ability to address many issues such as fisheries, marine protected areas, water quality protection, and shoreline protection has improved significantly. We need to build on those successes and to address those areas where fragmentation still impedes the implementation of the most effective and efficient approaches. California remains a leader in ocean and coastal management despite these remaining challenges, but improvements can and should be made.

The challenges that we face are substantial, but not insurmountable. In fisheries, we are experiencing significant declines in some species, but also have witnessed that species can move toward recovery with new management approaches and a little help from Mother Nature. New statewide fishery management approaches are in the early stages of implementation and new ones are being considered; it is anticipated that these efforts will yield future benefits.

Terrestrial sources of ocean pollution in California contribute to significant water quality degradation, impacting public health and marine ecosystems, as well as coastal and recreational economics that are essential to California's future. Many of California's coastal watersheds, beaches, bays and near-shore waters are impaired to some degree by industrial and agricultural pollution, sewage, storm water pollution, non-point source runoff, introduction of trash, and other sources of contaminants. However, we are making progress with programs like the coastal Non-Point Source Pollution Control Program, the Clean Beaches Initiative, and a variety of watershed and beach cleanup and stewardship programs. Some of our beaches have lost their supply of sand due to the construction of dams, coastal armoring, and other impediments to sand movement. We are working on ways to re-establish natural sources of sand and to better manage our sediment (sand) resources.

The fact is that protection and management measures, when based on sound science, can yield significant results. California must systematically re-assess the governance system that guides its protection of ocean and coastal resources. This assessment must reach from our inland watersheds to the deep ocean waters off our coast.

Recommendation 1

The Schwarzenegger Administration should call on the President of the United States and the Council of Environmental Quality to support the major provisions of the final report of the U.S. Commission on Ocean Policy that are acceptable to California and to advocate for other national ocean issues important to California that are not included in the final report. The Oceans Act of 2000 requires the President of the United State to submit to Congress a statement of proposals to implement or respond to the Commission's recommendations within 90 days or receipt of the report. The President is further required to

consult with State and local governments and non-federal organizations and individuals involved in ocean and coastal activities during the preparation of his report to Congress. To achieve this coordination and to urge action at the federal level, California should pursue the following actions:

- *Conduct a thorough review of the Final Report of the U.S. Commission on Ocean Policy to determine if it addresses California concerns.* The findings of that analysis should be communicated to the California Congressional delegation, members of the legislature, and other interested parties.

- *Consult with the Coastal States Organization, the Western Governor's Association, and the National Governor's Association to identify consensus concerns among states regarding the findings contained within the final report.* Principle among these would likely be the need to re-authorize a strong Coastal Zone Management Act, but there are many other issues where clear agreement exists between states.

- *Schedule a meeting with the chair of the President's Council of Environmental Quality within 30 days of the release of the Final Report of the U.S. Commission to discuss California concerns and those shared with other states.* Use this meeting to urge the President to submit a strong statement of proposals to Congress that advance coordinated and appropriately funded management efforts at the federal, state, and local level.

- *Work with the administration and members of Congress to ensure the implementation of long-term measures to improve the management and protection of ocean and coastal resources that coincide with the recommendations included in this Action Plan.*

Recommendation 2

Continue California's ocean leadership role by establishing a cabinet-level California Ocean Council with a mission to help ensure comprehensive and coordinated management, conservation, and enhancement of California's ocean and coastal resources for their intrinsic value and for the benefit of current and future generations. The council will be chaired by the Secretary for Resources, and include the Secretary for Environmental Protection and the Secretary for the Business, Transportation and Housing Agency at a minimum. This council will re-evaluate the comprehensive or "big picture" needs of California ocean and coastal management and create a strategic vision for the future that improves coordination and provides more efficient and effective methods of managing ocean and coastal resources. A foundation of the mission of this council will be to encourage the implementation of ongoing and new ecosystem approaches to ocean and coastal management. These activities will require a thorough identification and examination of existing laws, regulations, programs, and funding streams to implement them. Critical to these efforts will be for the council to set firm deadlines for the development a strategic and infrastructure needs plan for managing California's ocean and coastal resources. It will also require an examination of how state agencies can do a better job addressing specific issues facing the state regarding water quality, habitat protection, fisheries management, maintenance of our beaches and shoreline infrastructure, and other issues.

Some immediate actions include:

- *Update the California inventory of ocean and coastal laws and regulations for use by the ocean council, legislators, industry, and the public by January 1, 2005.* California was one of the first states in the nation to provide a directed inventory of its ocean and coastal laws and regulations. This inventory was prepared for inclusion in the 1997 California Ocean Agenda, and helped policy makers and legislators better understand the magnitude of the legal and regulatory structure in California for ocean and coastal management. One of the first actions of the U.S. Commission on Ocean Policy was to create for the first time an inventory of all federal laws (144 laws were identified). The new federal inventory provided a basis for the U.S. Commission analysis of program efficiency and for ways to improve it. An updated state inventory can serve the same purpose for California.

  The Council will commission a law enforcement assessment to determine the effectiveness of these laws and regulations, areas where more vigorous enforcement may be needed, and to identify any gaps in enforcement resources. This assessment should also be crafted so that periodic updates can be conducted to determine if progress is being made to achieve enforcement goals over time.

- *Identify successful California models of regional ocean stewardship and design new federal and state approaches to support them and to use them as models for future management approaches.* A major aspect of ecosystem management is to move beyond case-by-case or species by species approaches to management that focuses instead on ecosystem protection needs – often at a regional scale. This makes sense on an ecological basis, but also because such approaches can mobilize multiple levels of government and stakeholders to more efficiently and effectively address these issues.

  One example is the approach taken in the implementation of the southern California Wetlands Recovery Project (SCWRP) for wetland acquisition and enhancement. Regional wetland partnerships such as the SCWRP focus on a defined regional area and incorporate the resources, views, and expertise of agencies and organizations at the federal, state, and local level. Since its inception in 1998, the SCWRP has acquired 4,700 acres and restored 552 acres of coastal wetlands. The total number of projects it has funded to date is 68, with 25 of these already being completed. Other regional wetland partnerships operating in California include the Pacific Coast Joint Venture, Central Valley Habitat Joint Venture, the San Francisco Bay Joint Venture and San Francisco Bay Wetlands Restoration Program, and the Riparian Habitat Joint Venture. The Resources Agency in cooperation with the State Coastal Conservancy is currently funding an effort to evaluate the potential for establishing a Central Coast wetlands partnership. These efforts have a proven success record and projects are moving forward more rapidly and for less cost because of the efficient use of the combined resources and expertise of SWRCP participants.

Regional approaches are now being used for the creation of the statewide Coastal Sediment Management Master Plan (evaluating issues with sand movement and erosion along the coast) and will be the focus of efforts in the implementation of the Marine Life Protection Act (evaluating the need for systems of marine protected areas such as marine reserves, parks, and conservation areas). The Southern California Coastal Water Research Project has used a regional approach which combines the resources of government, dischargers and other partners to support regional monitoring that assesses the status of water quality throughout the entire Southern California Bight, instead of measuring pollutants at the end of a pipe. Reforms to management at the state and federal level should be designed to support these regional efforts and to consider new ones which can demonstrate more efficient and effective use of limited resources.

Acting as the coordinating body for these regional partnerships, the Council will create a summary of projects along the entire coast, identify gaps, and create a system for prioritizing projects and needs to inform funding priorities over time.

- *Develop enhanced partnerships with other levels of government (federal and local), industry, academia, non-governmental organizations and philanthropic organizations to carry out ocean and coastal management objectives.* Limited funding at the federal, state and local levels emphasizes the enhanced need for more efficient and effective processes and partnerships for ocean and coastal management. For example, the renewed implementation effort for the Marine Life Protection Act simply could not have gone forward absent a combination of resources from the state and federal government, academia and philanthropic organizations. New organizations such as the California Ocean Science Trust are intended to help fund research partnerships between to improve the translation of science to management. The regional efforts described previously are also dependent on the development of such partnerships.

  Acting as a coordinating body for these efforts, the Council will set a goal to establish a network of coastal and water quality monitoring projects, integrating academic, volunteer, and government programs to ensure the maximum monitoring that can feasibly be provided to assess biological productivity and water quality. This effort should be closely coordinated, if not incorporated into, the ocean observation system efforts currently under development in California, and nationally. This effort will help inform policy makers and the public on additional coastal management and protection needs and help measure our progress toward ocean and coastal management goals.

- *Monitor California's interests regarding international treaties (such as Law of the Sea) and its relationships with international organizations such as the International Maritime Organization regarding ocean and coastal management needs.* California has interests in international treaties and organizations for management issues that directly or indirectly impact the state. The Governor has expressed his support for the ratification of the Law of the Sea Treaty, for example, which would allow the United States to be fully engaged in management and commerce matters at the international level. California has specifically benefited from intervention in international processes just off its coast. California worked with the Coast Guard, the National Marine Sanctuary

Program and the International Maritime Organization to alter the location and configuration of the vessel traffic scheme for ship traffic off the central California coast to increase the safety of these operations. The result is that vessels with the potential to spill oil or other hazardous cargoes are now routed farther off the coast to reduce the risk of groundings, to lesson the chance of spilled oil reaching shore, and to provide more response time for spills that do occur. Other emerging ocean management issues in the Exclusive Economic Zone and along our border with Mexico will necessitate ongoing attention to international issues.

- *The council will establish a working group with all state and national governments from Alaska to Baja to examine maritime standards of care related to the transport of hazardous materials along our shared coastline, including but not limited to petroleum products, radiological materials, Liquefied Natural Gas, and hazardous waste.* The purpose of this examination will be to create a unified approach and joint standards of care to create the highest level of security and protection of these traits.

- *The Council will act as the primary body to ensure adequate planning, readiness and coordination of ocean and coastal emergency response.* The Office of Oil Spill Prevention and Response has prepared an environmental sensitivity index to address fish, wildlife, and habitat concerns which help guide response actions. The Council will ensure that this database is, at all times current and will also ensure that guidance is provided to ensure the frequency and minimum criteria for emergency response training and exercises. These actions will be necessary to ensure that coastal resources are adequately protected to the maximum extent practical when emergencies occur.

- *The Council will sponsor a California and the World Ocean conference for the spring of 2006.* Nearly 40 years ago California sponsored the first California and the World Ocean conference, the 1964 *Governor's Conference on California and the World Ocean,* held in Los Angeles to discuss the emerging issues surrounding ocean management. The conference was re-established in 1997 and held again in 2002. These more recent conferences have focused on the many challenges facing our state with a current population of 35 million and climbing, as well as the challenges faced nationally and internationally in anticipation of the release of the Pew and U.S. Ocean Commission reports. Another conference in 2006 would be well timed to assess and help drive new directions in California, nationally and internationally. The Council will sponsor a conference every four years thereafter to report on progress made on water quality, habitat restoration and protection, law enforcement, fisheries protection and other shared ocean values and goals.

B. ECONOMICS AND FUNDING

California's 1997 Ocean Agenda included the first assessment of the economic contribution of ocean dependent industry ever conducted in California, and probably the first such comprehensive analysis to be conducted for any coastal state in the nation. The *Economic Assessment of Seven Ocean-Dependent Activities* prepared by the California Research

Bureau for the Resources Agency established that the ocean plays a critical role in the statewide and national economies. Although this analysis is over 14 years old, it continues to be used and cited extensively. The Resources Agency has contracted for a new California ocean economic analysis, which is being conducted as part of the National Ocean Economics Project.

California does not have a comprehensive assessment of its major investments in ocean and coastal management, enforcement, monitoring, research and education. Part of the problem with assessing this investment is that many departments, boards, offices, conservancies and commissions have lead or partial roles in these issues. In order for California to maximize its investment in protecting and managing its ocean and coastal resources, it needs to examine the thrust of these investments to identify gaps and areas of overlap.

Economics and Funding Analysis

There is no accounting system in place in the United States or in California to regularly assess the economic benefits derived from the ocean and coast. In addition, there is no comprehensive evaluation of the levels of investment in California to fund ocean and coastal management and protection programs. Actions are necessary to improve our understanding of the economic benefits of the ocean and coast and to determine the most effective and efficient management investments. The California Resources Agency has contracted for a revised economic analysis to be prepared by members of the National Ocean Economics Project so that the results will be consistent with data being produced in other coastal states. This will permit comparability between states and will allow the results to contribute to a national data base. In addition to the need to complete an analysis of the economic benefits derived from the ocean, there currently exists no comprehensive analysis to assess the level of investment that California is making in ocean and coastal management activities.

Recommendation 3

Finalize, distribute and make use of the California portion of the National Ocean Economics Project (California's Ocean Economy) to help inform decision makers and members of the public about the economic benefits derived from the ocean and the coast. California, as a national leader in conducting this analysis in the past, can continue in that role by completing this analysis and widely distributing the results.

Some immediate actions include:

- *Hold an "Ocean Economic Symposium" to seek consensus from leading economists from government, academia, the private sector, and the non-governmental community regarding the economic contribution of the ocean to the California and national economies.* The focus of the peer review process will be to validate the methods used in the analysis and its conclusions. The overall objective will be to seek agreement from a wide range of economists about how to identify and express the economic contribution of the coast and the ocean to California and how to continue this process on an annual basis.

- *Determine California's investment in ocean and coastal management, enforcement, monitoring, research and education to identify gaps and areas of overlap.* Request the California Legislative Analysts Office, in collaboration with the Joint Committee on Fisheries and Aquaculture, to conduct an inventory and analysis of state funding for important ocean and coastal management, enforcement, monitoring, research and education programs. Key to this analysis will be to use the information to help determine if California's investment is providing the most effective and efficient management and protection of California's ocean and coastal resources. Hopefully, this information can help support the formation of a multi-year funding strategy that places significant emphasis on seeking funding assistance and partnerships with the federal government, non-governmental organizations, industry and philanthropic interests.

- *Support the establishment of the National Ocean Policy Trust Fund recommended in the Preliminary Report of the U.S. Commission on Ocean Policy.* The Governor should continue to support the establishment of a National Ocean Policy Trust Fund, or similar federal funding mechanism, on the assumption that such a fund could provide a sustainable source of funding and that such a fund would not provide incentives for future offshore oil and gas development. California is opposed to new offshore oil and gas development along its coast, and has prevailed in litigation against the U.S. Department of the Interior regarding its right and duty to ensure that any re-issuance of oil and gas tracts on the Outer Continental Shelf (OCS) be consistent with the requirements of the National Environmental Policy Act and the Coastal Zone Management Act (CZMA). California would vigorously oppose any funding process that would provide incentives for new offshore oil and gas development on the OCS.

- *Support the development of additional federal match funds for coastal and estuarine conservation projects.* Leverage of federal funds would significantly advance the state's efforts to implement conservation projects to address ecosystem management, water quality, public health and recreation needs. Initiatives to provide additional federal funds for such projects include 1) the amendment of the CZMA to authorize funding for acquisition of coastal and estuarine areas, and 2) the development of competitive matching grants, such as under the existing Coastal and Estuarine Land Protection Program.

C. RESEARCH, EDUCATION AND TECHNOLOGY DEVELOPMENT

The State of California has collaborated on research and monitoring initiatives on a long-term basis with entities such as the California Cooperative Oceanic Fisheries Investigations (55 years), the UC and USC California Sea Grant Programs (over 30 years), and collaborations with organizations such as the Southern California Coastal Water Research Project (35 years). There have also been investments in more recent endeavors such as the California Data Information Program (CDIP), marine managed area research through California Sea Grant, and new bond fund investments in the emerging California Ocean Currents Monitoring Program. Education programs exist at a variety of levels from technical doctorate programs and field programs to the education of school children at the K-12 level. Partnership programs exist with the University of California, the California State University System, and private

institutions, as well as with federal programs such as the National Marine Sanctuary Program, National Estuary Program, and National Estuarine Research Reserve Program. Non-profit organizations also provide an impressive array of research, education and outreach initiatives.

California has led the nation in its ocean and coastal science research and monitoring programs over the years. Continuing in that leadership role California is launching a $21 million Ocean Currents Monitoring System that will provide important information that will assist with climate research, fisheries management, and even search and rescue operations. This new monitoring system will provide the structure for an overall ocean observation system for California, which would be one of the first such systems in the nation. This system, along with the research initiatives mentioned above, is being designed to help support California ocean and coastal management and protection objectives.

Research, Education and Technology Development Analysis

Government, academia, industry, and the non-governmental community need to seek consensus (where possible) on the highest priority research and outreach objectives to assist ocean and coastal management needs. Research should be the foundation of good public policy, but often it is not. Therefore, it is important to seek consensus on the research that will address the highest priority management questions facing the State of California. California is blessed with world-class research institutions, substantial expertise within its boards, departments, and commissions, as well as expertise from industry and non-governmental organizations. It will be important to seek consensus (where possible) on ocean and coastal research priorities for California and then to work with all these entities to obtain the funding, to share resources, and to apply the knowledge gained to real world management challenges.

Recommendation 4

Develop a state-wide ocean and coastal research and outreach strategy with clearly stated priorities for California. Identify and re-evaluate the ocean and coastal research and outreach needs for the State of California develop a statewide strategy in collaboration with the University of California Marine Council (UCMC), the California Ocean Science Trust (CalOST), and California Sea Grant. The UCMC, CalOST, and California Sea Grant are willing to partner with the Resources Agency and California Environmental Protection Agency (Cal/EPA) to help fund and participate in a facilitated meeting which has been scheduled to occur November 2004. All three of these entities were already in the process of strategic planning for their organizations, and those strategic planning efforts would coincide with the development of this California Research and Outreach Strategy. The result would be the concurrent development of information which would lead to the development of a state-wide strategy, and the strategic plans of the three other partners. This approach will provide for a consistent and cost-effective process for all participants with the added benefit that money saved can directed to research, instead of conducting four duplicative planning processes.

Recommendation 5

Ensure that ocean and coastal education is included in the environmental principles and concepts being developed pursuant to the implementation of the Education and the Environment Initiative (Pavley, Chapter 665, Statutes of 2003 - AB 1548). The Resources Agency and the California Environmental Protection Agency (Cal/EPA) will closely participate in this process as part of the education partnership that will address the incorporation of environmental principles and concepts into the K-12 curriculum. Principle among them will be the need the incorporate ocean and coastal learning opportunities. In addition to this effort, the Resources Agency and Cal/EPA should continue to work with and support the many excellent educational programs that exist outside the classroom offered through aquariums; state agencies such as the Coastal Commission, Fish and Game, and State Parks; marine sanctuaries; National Estuarine Research Reserves; National Estuary Programs; and programs run by non-governmental organizations.

Recommendation 6

Develop an Ocean Observation Master Plan to guide the development of the state's $21 million investment in the Ocean Currents Monitoring System and its integration with other sources of ocean and coastal monitoring and research data. The State of California should prepare and complete a "Master Plan" for the development of an overall California Ocean Observation System in California. The development of this Master Plan should proceed in close coordination with the research and education needs evaluation described previously, relevant research institutions, and the National Oceanic and Atmospheric Administration. California is demonstrating national leadership in this effort and is in the process of developing collaborations with academic and other institutions in southern California (Southern California Ocean Observation System [SCOOS]) and in central and northern California (Central California Ocean Observation System [CENCOOS). The Master Plan must be designed to combine the products of new land and ocean based data collection systems, with the ongoing data being collected through more conventional means via monitoring programs such as the California Cooperative Oceanic Fisheries Investigations (CalCOFI) and the Southern California Coastal Water Research Project (SCCWRP).

Recommendation 7

Seek federal grants, or grants from other non-governmental sources, to revitalize the California Ocean and Coastal Environmental Access Network (CalOcean) on the Resources Agency Website to provide access to marine data sets, geographic information systems, electronic documents, information regarding organizations, and marine and coastal news. The California Resources Agency currently has the CalOCEAN website which allows users to learn about the California Ocean Resources Management Program and to search for information regarding ocean and coastal management. However, budget cuts over the years have reduced the ability to maintain this system with up-to-date links and state-of-the-art data access systems. There is clearly a need to upgrade this system to provide information to policy makers, industry, academia and the public.

D. OCEAN AND COASTAL STEWARDSHIP

California has played a leading role in developing and implementing an ecosystem approach to managing fisheries, marine and estuarine habitats, water quality, shorelines, and other resources. As the Preliminary Report of the U.S. Commission on Ocean Policy stated, ecosystem management "looks at all the links among living and nonliving resources, rather than considering single issues in isolation." California's Ocean Agenda made clear in 1997 that ocean management must consider all the linkages within California's entire ocean ecosystem, including inland watersheds; bays, estuaries, and coastal lagoons; near shore ocean waters, and deep ocean waters. All of these areas are biologically connected, and the challenge has been and will continue to be to make our system of governance responsive to these ecological relationships.

Ocean and Coastal Stewardship Analysis

The recommendations of the U.S. Commission on Ocean Policy, and the ocean and coastal protection and management needs of the State of California, make a compelling case for ecosystem management approaches. Although there appears to be broad agreement regarding the logic and theory of ecosystem management, the conversion of federal and state processes to adhere to these principles is not simple. California is using ecosystem approaches in many of its management processes now, and many of these efforts are being done in collaboration with the federal government. However, these processes are often difficult to initiate as they are combining new innovative approaches with a body of law, policy, and funding practices that often do not encourage such approaches. The challenge at the federal and state levels is to seek to help coordinate agencies to work on such initiatives, to identify changes in law and policy that will actually encourage, rather than discourage, such innovation, and to help get these initiatives funded. This leadership can start with the formation of the National Ocean Council recommended in the report of the U.S. Commission on Ocean Policy, and the California Ocean Council recommended in this Action Plan.

Recommendation 8

Increase efforts to pursue, support, and fund ecosystem management approaches at the federal and state level to guide the stewardship of ocean and coastal resources. The successful long-term implementation of ecosystem management will require a commitment from the highest levels of both the federal and state government. Neither can achieve this form of management alone, but both must work together and with other stakeholders to identify changes in laws, policies, and funding approaches that can make these complex processes a reality in the long-run. The recommended Ocean Councils at the state and federal levels can help by providing greater support for existing ecosystem processes and by identifying other management areas that can be modified to adopt this approach. This Action Plan recommends the building blocks for California to achieve these advances (i.e. establishing a California Ocean Council), examining existing law and policy, evaluating the economic contribution of the ocean and coast and the current level of investment in management, and developing a clear ocean and coastal research, outreach and education approach to support these efforts.

Recommendation 9

Strengthen the "California Watershed Management Memorandum of Understanding (MOU)" to identify priority watersheds for resource protection and use, fishery recovery, and water quality, and improve delivery of state technical and financial assistance to impaired coastal watersheds. Multiple state entities within the California Environmental Protection Agency (Cal/EPA) and California Resources Agency currently administer programs that provide technical assistance or financial support for various aspects of watershed management, and hundreds of local watershed partnerships exist in the state. Improved watershed management can start at the state level with the coordination of state technical assistance and funding and the integration of state regulatory programs to address the most impaired coastal watersheds and the most critical resource protection needs.

Specific actions include:

- *Draft and execute a new MOU requiring coordination of existing state programs.*
- *Evaluate and prioritize coastal watersheds and focus state resources and efforts in cleaning up, protecting or restoring these watersheds as soon as possible.*
- *Facilitate development and implementation of one or more integrated coastal watershed management plans.*

Recommendation 10

Integrate coastal water quality programs to improve their efficiency and effectiveness and clean up coastal watersheds, estuaries, bays, beaches, and near-shore waters. The state currently has several programs focused on coastal water quality and fisheries recovery including the Clean Beaches, Coastal Non-Point Source Pollution Control, Integrated Watershed and Integrated Regional Water Management programs, Fishery Grants programs, Coho recovery plan, as well as numerous other programs housed in the California Environmental Protection Agency (Cal/EPA) and California Resources Agency. The Council will develop an action plan to coordinate state financial and technical assistance programs to facilitate projects and programs that restore and protect coastal and near-shore resources, habitats and water quality. To facilitate priority setting and focus implementation on the most impaired watersheds, the state should establish limitations on the quantity and quality of pollution discharges that are plain and unambiguous and contain readily identifiable indications of success or failure.

Recommendation 11

Identify and prioritize ocean and coastal management issues where intervention by the council can help coordinate, expedite, and help fund necessary actions. The number of ocean and coastal issues in a state like California with 35 million residents, and millions of visitors annually, is arguably endless and priorities will need to be identified. Ocean and coastal management issues in California can be broadly grouped as issues dealing with the

management of ocean and coastal resources (fisheries, water quality, habitats, shoreline resources such as beach sand) and management of economic uses and infrastructure needs (energy, water availability, ports, etc). Both categories of issues are interrelated and impact each other, but for organizational purposes, and because each they represent different management challenges, they are discussed separately below. These are some of the top priority issues that the Council will evaluate to determine if systematic administrative or legislative changes or enhance coordination can help improve the efficiency and effectiveness of the approaches, or simply if these efforts can benefit from additional support. This is not an exhaustive listing of issues of concern, but provides a general indication of some of the major challenges facing ocean and coastal managers in California.

MANAGEMENT OF RESOURCES

The following is a brief overview of some of the major resource management issues addressing ocean and coastal management. This overview is divided into Habitats, Living Marine Resources, and Water Quality; Coastal Sediment Management and Coastal Erosion; and Bays, Estuaries, and Coastal Lagoons.

A. HABITATS, LIVING MARINE RESOURCES AND WATER QUALITY

California faces ongoing challenges in its efforts to manage and protect marine habitats, living marine resources, and the very existence of beaches. Below are some of the challenges and opportunities that should be considered and prioritized by the Council to help facilitate need management action.

California Coastal Management Program

The CZMA established a unique relationship between federal and state governments to carry out ocean and coastal management objectives. California's Coastal Management Program includes the California Coastal Commission (CCC), the San Francisco Bay Conservation and Development Commission (BCDC), and the California Coastal Conservancy (Coastal Conservancy). In San Francisco Bay, the San Francisco Bay Conservation and Development Commission (BCDC) became the first coastal management program in the nation in 1965, leading the way for the subsequent establishment of the Coastal Zone Conservation Commission by public initiative in 1972, and later the legislatively established the CCC and the Coastal Conservancy in 1976. The CCC and BCDC implement the planning and regulatory functions of the program and the Coastal Conservancy uses non-regulatory means to resolve conflicts and provides financial and technical aid to address a wide variety of issues ranging from urban waterfront development to projects to help purchase, protect, restore, and enhance wetlands and other habitats. These agencies, and their enabling statues, comprise California's federally approved Coastal Management Program.

Key challenges include the need to maintain a strong California coastal management program which is considered to be one of the finest in the nation. As part of that support, the Governor has urged that the federal CZMA be re-authorized with strong provisions to support the non-point source pollution control program, federal consistency provisions of the statute (provides authority over federal permit activities such as OCS oil and gas development), and appropriate levels of federal funding to help support these programs.

Marine Life Protection Act

The 1999 Marine Life Protection Act (MLPA) was established to protect California's marine natural heritage through the establishment of a network of marine protected areas, to be designed, created, and managed according to sound science in order to

protect the diversity and abundance of marine life and the integrity of marine ecosystems. The Resources Agency and the Department of Fish and Game are leading a renewed effort to implement the MLPA through a cooperative effort funded by a public-private partnership, and enhanced by the advice of scientists, resource managers, experts, stakeholders and interested members of the public. This new approach will combine the development of a statewide Master Plan, with a series of focused regional projects beginning with an initial effort in the central coast.

Key challenges with the implementation of the MLPA will be to ensure that stakeholders are able to participate in all stages of the effort, it can be coordinated with federal agency processes, and long term funding can be secured for the monitoring, research, enforcement and management that will be required to support these areas.

Marine Life Management Act

The Marine Life Management Act (MLMA) administered by the Department of Fish and Game, opened a new era in the management and conservation of California's marine living resources. Intended to manage marine resources on an ecosystem basis, the Act applies not only to fish and shellfish taken by commercial and recreational fishermen, but to all marine wildlife. Rather than assuming that exploitation should continue until damage has become clear, the MLMA shifts the burden of proof toward demonstrating that fisheries and other activities are sustainable. Through the MLMA, the Legislature delegates greater management authority to the Fish and Game Commission and the Department of Fish and Game. Rather than focusing on single fisheries management, the MLMA requires an ecosystem perspective including the whole environment. The MLMA strongly emphasizes science-based management developed with the help of all those interested in California's marine resources.

Key challenges with the implementation of the MLMA are the requirement for science based management, constituent involvement, development of fishery management plans, and the eventual development of a master plan that prioritizes fisheries according to the need for them to be included in comprehensive management approaches.

Aquatic Nuisance Species

California waters are being substantially impacted by the introduction of plants, fish, and other animals from around the world – often known as aquatic nuisance species. Principle pathways for these species include introduction from the ballast water in large commercial ships, dumping from recreational aquariums, or occasionally intentional introduction. While they may be harmless in their native waters, once introduced to a new area without their native predators, aquatic nuisance species can transform entire ecosystems. Further, aquatic nuisance species that survive in California waters often have high reproductive rates, can disperse easily, and can tolerate a wide range of environmental conditions, making them very difficult to eradicate. In recent years California's waters have been impacted by a number of aquatic invasive species, including the European green crab, the Chinese mitten crab, Caulerpa taxifolia (“killer algae” from the mediterannean), Arundo donax, New Zealand mudsnail and non-native Spartina species.

Key challenges include the need to support of efforts to eradicate species that have taken hold such as the Invasive Spartina Project and the Southern California Caulerpa Action Team. Recent legislation requires the Department of Fish and Game and an Interagency Aquatic Species Council to develop a comprehensive plan for dealing with aquatic invasive species in California. A preliminary draft of the Plan has been completed, but the Council is yet to be appointed. It will be necessary to identify funding to implement actions outlined in the plan. The State Lands Commission is required to develop and adopt ballast water management practices for vessels arriving at California and that report is due in January 2005.

Watershed Management

Managing our coastal and inland watersheds is critical for managing our coastal bays, lagoons, and nearshore ocean waters. However, the implementation of the principles of watershed management in California is challenging. At the state level, there are numerous programs that provide technical assistance or financial support for various aspects of watershed management or restoration. At the local and regional level, hundreds of watershed partnerships exist throughout the state. In 2002, California made significant progress toward coordination of state programs supporting watershed protection, restoration and stewardship efforts with the passage the Watersheds, Clean Beaches and Water Quality Act, (AB 2534, Pavley). As a result, the Resources Agency and the California Environmental Protection Agency (CalEPA) are currently working together to improve coordination of watershed programs and approaches among state agencies, to work closely with watershed groups, local agencies and other stakeholders to secure funding and implementation of watershed activities to improve water quality, upland conditions, water supply, fisheries and habitat, and recreation and other watershed uses. They are also working together to establish a new Integrated Watershed Management Program for grants to support planning, management and monitoring activities.

Key challenges include the need to coordinate California's watershed management programs to ensure that federal, state, and local resources are being used as efficiently and effectively as possible, while building local capacity for long-term stewardship and working locally to leverage private and non-profit resources. Examples of broad regional partnerships that can form the basis of such a system include the Water Quality Protection Program of the Monterey Bay National Marine Sanctuary; the watershed programs of the Santa Monica Bay Restoration Commission; regional watershed, multi-county, salmonid conservation efforts such as the Five County Salmon Conservation; and the CalFed Watershed Program, which funds activities at various watershed scales in the Sierras, central valley and southern California areas.

Control of Polluted Runoff (Non-Point Source Pollution)

Polluted runoff, or non-point source pollution (NPSP), is considered the major remaining cause of impairment of state waters. In July 2000, California was the first state in the nation to receive full federal approval of its Coastal Nonpoint Source Pollution Control Program by the U.S. Environmental Protection Agency and the National Oceanic and Atmospheric Administration (the lead federal agencies that administer the Clean Water Act and CZMA). The program includes the coordinated participation of the California Coastal Commission, the State Water

Resources Control Board (SWRCB), the nine Regional Water Quality Control Boards, and a Non-Point Source Interagency Coordinating Committee. The program is currently implementing the second of three sequential five-year implementation plans. The current plan, covering the years 2003 to 2008, was submitted to USEPA and NOAA in January 2004. Although the SWRCB and CCC have lead roles in developing and coordinating the implementation of the program, they are not solely responsible for solving the problem. Over 20 other state agencies have authorities, programs, or responsibilities relating to the control of NPSP.

Key challenges include reducing the impacts of this ubiquitous form of pollution over our large and geographically diverse state, coordinating the efforts of many responsible entities, and evaluating the effectiveness of the program statewide. A subcommittee of fifteen state agencies and the Ocean Conservancy is currently working to identify watersheds along the coast where expedited implementation of the NPSP program is needed to restore impaired water quality or protect high quality waters. This Critical Coastal Areas program is expected to demonstrate the water quality benefits of resource-based watershed planning and the cooperation of state, local and federal agencies and local stakeholders. California will need to rely on a wide range of tools, activities and authorities to address NPSP statewide.

Clean Beaches Initiative

The goal of the California Clean Beaches Initiative (CBI) is improving beach water quality. The State Water Resources Control Board (SWRCB), which has the primary responsibility for implementing the CBI, has developed four major program elements to achieve this goal: 1) grant programs to local agencies, 2) a rapid test for indicator bacteria, and 3) improved public reporting and accountability, and 4) enhanced interagency communication and collaboration. Further, the SWRCB's own strategic plan, which was adopted in 2001, states that by the year 2010 beach closures and advisories are to be reduced by 75% (i.e., from 2000 numbers). The SWRCB is also developing a public reporting system, "Beach Watch", to provide information to the public on the water quality history at beaches via the Internet. The SWRCB will use "Beach Watch" as its report card and it will be used to determine how the state is doing at reaching its strategic goal. The SWRCB also formed the Beach Water Quality Workgroup (BWQW), a coalition of federal, state, and local governmental agencies, environmental advocacy groups, environmental consultants, and scientific researchers, to improve inter-agency collaboration. The BWQW is a driving force for development of better public health protection tools, and is coordinating the development of research tools and consistent monitoring and reporting protocols throughout California.

The key challenges that lay ahead include: 1) eliminating sewage spills, 2) reducing contaminated stormwater, urban runoff, and marine debris, 3) developing quicker and more cost effective source identification tools, and 4) maximizing the use citizen volunteer organizations. Addressing all of these challenges will require additional levels of funding.

B. COASTAL SEDIMENT MANAGEMENT AND COASTAL EROSION

California’s spectacular coastline includes sandy beaches, sheer bluffs, rocky headlands, intertidal zones, and other diverse shoreline types. This narrow interface between land and sea

is the focus of much interest between the economic sustainability of tourism and recreation, public access, private property rights, and resource restoration, preservation and protection. Although coastal erosion is a natural process, this natural process has been considerably affected by human activities along the shore and within waterways that deliver the sediments that form the building blocks for beaches (i.e., sand). Long-term solutions to addressing California's changing coastline requires a better understanding and management of these sediments.

The California Coastal Sediment Management Master Plan (Sediment Master Plan) is a collaborative effort between federal, state, and local agencies and non-governmental organizations to evaluate California's coastal sediment management needs on a regional and system-wide basis. In short, this plan will help identify the volume of sediments coming to the coast from inland waterways, impediments to sediment movement along the coast, and areas that are now hot spots of coastal erosion. This analysis is intended to help develop regional management efforts that will provide lasting benefits and allow agencies, communities, and industry to work together to leverage financial and technical resources. Workshops on this process have been held up and down the California coast to obtain input from all interested parties. The Resources Agency was previously working on the development of a shoreline erosion strategy to consider a set of principles for addressing coastal erosion, potential legislative changes, and by including a requirement for the completion of the Master Plan mentioned previously. This effort has been put on hold due to lack of funding.

Key challenges are to complete the Sediment Master Plan and to incorporate its findings into on-the-ground efforts to manage our shoreline. Consideration should be given in the future to re-evaluating the coastal erosion strategy if sufficient resources can be identified to continue with its development.

C. BAYS, ESTUARIES AND COASTAL LAGOONS

Our bays, estuaries, and coastal lagoons are ecologically, economically and recreationally important to California, as these are the major transition zones between land-based fresh water resources and the sea. Freshwater originating from as far away as the Sierra Nevada and the Cascade Ranges in Oregon mixes with saltwater from the Pacific Ocean and, in the process, creates some of the state's most unique and sensitive habitats. Resource protection issues in these waters involves management of wetlands, sub-tidal habitats, water quality, and mineral resources. Uses in these waters ranges from ports, ferry transportation systems, parks, restaurants, reserves, and coastal dependent industries. Issues include concerns regarding dredging and fill operations, protection of coastal dependent uses, restoration of threatened habitats, water quality and other impacts from developments.

The state has worked with its federal and local partners to establish National Estuary Programs in three nationally significant estuaries in California; San Francisco, Morro and Santa Monica Bays. Under Clean Water Act Section 302, each estuary program is required to develop a "Comprehensive Conservation and Management Plan" (CCMP) for attaining or maintaining water quality in the estuary. The CCMP for San Francisco Bay has been approved by the Governor and the USEPA Administrator while the CCMPs for both Morro and Santa Monica Bays are still under development. In addition, the state has also formed

partnerships with NOAA under the National Estuarine Research Reserve System. National estuarine research reserves in San Francisco Bay, Elkhorn Slough, and the Tijuana River provide essential habitat for wildlife; offers educational opportunities for students, teachers and the public; and serves as living laboratories for scientists.

Key challenges include addressing those issues mentioned above, as well as the many issues identified in this Action Plan that occur along the open coast, but also within these areas. An important challenge is to recognize the importance of consideration inclusion of our bays, estuaries and coastal lagoons as we consider new statewide approaches to coastal management, watershed and water quality protection, monitoring, research, enforcement and other issues of statewide significance.

MANAGEMENT OF ECONOMIC USES AND INFRASTRUCTURE

The following is a brief overview of some of the major resource management issues addressing the management of economic uses and infrastructure needs. This overview addresses Fisheries, Marine Aquaculture, Liquefied Natural Gas Importation, Coastal Power Plants, Offshore Oil and Gas Development, Tourism and Recreation, Saltwater Desalination, and Urban Waterfront Restoration

A. PORTS, HARBORS AND MARITIME INDUSTRIES

California's local agency port system is a collection of city departments, special districts and charter ports. California's ports are one of the largest generators of economic activity of the ocean dependent industries in California. Of nine ocean dependent industries evaluated by the California Research Bureau in 1995, ports were second only to coastal tourism in their contribution to the economy through wages and income. A pressing issue for ports is water depth and the dredging needed to construct and maintain navigation channels that allow ships to come and go without delays and without being only partially loaded. California ports compete with Washington and Canadian ports in Puget Sound, which do not have the same dredging issues. Another pressing issue for ports is landside access. Intermodal connections between transportation modes are typically the weakest links in the Nation's transportation system.

Key to these operations is the ability to have predictable regulatory processes to use to maintain infrastructure, dredging needs, and fill operations where necessary. These ports are critical to the movement of cargo, oil and other products, and passengers. Innovative processes have been developed such as the San Francisco Bay Long-Term Management Strategy (LTMS) for the placement of dredged material in the San Francisco Bay region, the state and federal multi-agency San Francisco Bay Dredged Material Management Office (DMMO), and the multi-agency Los Angeles Region Contaminated Sediment Task Force charged with the preparation of a long-term management plan for dredging and disposal of contaminated sediments in the Los Angeles area.

In addition to the commerce value of the ports, these waters provide important sheltered water habitat for a wide variety of ocean and coastal species that are ecologically important, as well as being important to commercial and recreational fishery interests. For example, the waters within the Ports of Los Angeles and Long Beach include some of the last sheltered sub-tidal habitat in southern California, providing nursery habitat for some species and year-round habitat for others. San Francisco Bay provide important habitat for commercial Dungeness crab, Chinook salmon and Pacific herring.

Key challenges include the need to assess whether these relatively new multi-agency entities are fulfilling their role in providing a predictable process for necessary port improvements, while ensuring the protection of critical habitats. Ports and harbors often require mitigation to offset the impacts of projects within harbor waters. However, because of the typically large scale of port and harbor projects, it is often a challenge for ports and harbors to find suitable mitigation. As mentioned previously, there is ongoing concern regarding the introduction of

aquatic nuisance species from the release of ballast water from vessels using these port facilities.

B. FISHERIES

Fisheries management and allocation issues in California are addressed by the state Department of Fish and Game (DFG), state Fish and Game Commission (FGC), California Legislature, and U.S. Department of Commerce's NMFS and Pacific Fishery Management Council (PFMC). DFG is mandated to balance the protection of marine resources with the needs of the commercial and recreational fishing industries to maximize their long-term fishery yields. The FGC has the authority to set policy for sport fisheries, some commercial fisheries (such as anchovy, mackerel, and herring), and kelp harvesting. Policy issues not determined by the FGC are addressed through the enactment of new legislation. The NMFS is responsible for assessing fishery stock size, determining sustainable harvest rates, and evaluating habitat constraints for federally managed species. As a regional body funded through the Department of Commerce, the PFMC primarily develops, monitors, and revises management plans for fisheries between 3 and 200 miles of the U.S. coast. Important ocean and coastal fisheries in California include, but are not limited to abalone, albacore, dungeness crab, groundfish, market squid, Pacific herring, salmon, sea urchin and rockfish. Managing California's ocean and coastal fishery stocks at sustainable levels is complex and depends on such things as accurately assessing wild stocks and judging the impacts that multiple harvesters have on a resource. The previous discussion of management approaches describe new authorities such as the Marine Life Protection Act (MLMA) or the Marine Life Protection Act (MLPA) provided to the DFG to guide the management and protection of marine resources on an ecosystem basis.

Key challenges include funding limitations have made it difficult to assess the full impact of all fishery activities (particularly sport fishing), but the available information indicates that some fishery stocks are substantially stressed and declining, while others remain at sustainable levels. Determining the cause of stock declines and implementing solutions is challenging for managers attempting to assess the health of California’s fishery stocks, involving analysis of habitat modifications, weather conditions, fishing practices, and water quality conditions. But, reversing these declines is important as California’s fishing industry is substantial, ranking fourth in the nation in total seafood landed for 1991, while Californian's consume more seafood per capita than the national average. Declining fishery stocks have put substantial economic hardship on northern California communities.

Also, much concern has been raised regarding the enforcement of fish and game laws (and related federal statutes) intended to maintain fishery stocks at sustainable levels. The DFG has entered into several partnership agreements with other state and federal agencies, and in some cases private entities, to increase enforcement of a wide variety of marine protection laws - including those dealing with maintenance of fisheries stocks. Reversing fishery declines and protecting sustainable coastal fisheries can also be achieved through coordinated partnerships that maximize conservation funding opportunities for projects such as the removal of barriers to fish passage, and the implementation of projects that protect and restore watersheds and important intertidal and subtidal habitats.

C. MARINE AQUACULTURE

Commercial marine aquaculture in California includes, almost exclusively, the production of molluscan shellfish. Four types comprise the bulk of the production: oysters, clams, mussels, and abalone. Production methods and infrastructure needs vary with the type of organism and the facility, however, all types rely on natural plant production for feed. The preliminary report of the U.S. Commission on Ocean Policy discussed the benefits of these operations. For example, farmed oysters, clams, mussels, and abalone are all listed as "best choices" in the Monterey Bay Aquarium's Seafood Watch program. Some of the issues raised with marine aquaculture include the potential for the introduction of aquatic nuisance species, concerns about impacts to water quality, and competition for space within California's port facilities.

Key challenges include the fact that new, larger scale, and potentially innovative marine aquaculture operations are anticipated to be proposed in the coming years. The state should continue to support research to help determine how these operations can be approved and operated safely within California waters. Recent permit requirements have required strict monitoring of these operations which can help provide the data for such research.

D. LIQUEFIED NATURAL GAS IMPORTATION

According to the U.S. Energy Information Agency, the United States, including California, needs to consider developing additional supplies of natural gas to meet its growing demand. Because North American supply basins are maturing, the U.S. will need to rely more on imported supplies, including Liquefied Natural Gas (LNG). California already imports 85 percent of its natural gas supply from these basins. Currently, the United States has five LNG-receiving and re-gasification terminals, including one in Puerto Rico, but no terminal is located on the West Coast. Previous efforts to site such facilities in the late 70s on the west coast were abandoned. Recently, however, a number of companies have proposed to build LNG import facilities along the California coast, at other locations in the United States, and in Baja California, Mexico. Environmental analysis regarding the siting of new LNG receiving terminals facilities will include an examination of the impacts from intake and outfall structures for re-gasification, impacts from the physical siting and operation of the facility, and the safety of the receiving terminal operations, coastwise vessel traffic, and LNG product storage.

Key challenges include the need to ensure that any such facilities can be sited consistent with California's strong coastal protection laws, and that the operations can be conducted safely.

E. COASTAL POWER PLANTS

Coastal power plants have been sited along the California coast and within some of its bays and estuaries to take advantage of the opportunity to use sea water for once through cooling of the facilities. There are 25 generating stations along the California coast, comprising 41% of California's current generating capacity (22,000 Megawatts). Most of these facilities were constructed in the 1940s and 1950s and have average efficiencies of 33 to 38 percent. Many of these facilities are scheduled to be refurbished, replaced, repowered, and/or expanded and also many require retrofits to improve air emission controls. It is hoped that through these

renovations, efficiency rates can be increased to over 50 percent with a goal of increasing generating capacity by as much as 73 percent.

Key challenges include the need to address the impacts of conducting these improvements and developing this new generating capacity. As of 2003, the California Energy Commission has approved 2,040 megawatts, and is currently reviewing an additional 2,400 megawatts. California Energy Commission staff expect to receive proposals for another 3,000 megawatts in the next 3 years. These improvements could cause additional impacts on aquatic resources (from intake and outfall systems), potential conflicts with coastal land uses, and may receive opposition from local communities over the increased size and sometimes longer operating hours of new facilities.

F. OFFSHORE OIL AND GAS DEVELOPMENT

California is opposed to new offshore oil and gas development along its coast, and has prevailed in litigation against the U.S. Department of the Interior regarding California's right and duty to ensure that any re-issuance of 36 oil and gas tracts on the Outer Continental Shelf be consistent with the requirements of the National Environmental Policy Act (NEPA) and the Coastal Zone Management Act (CZMA).

Key challenges regarding this issue include the need for a long-term solution to this issue off the California coast. The options include the oil and gas industry complying with federal and state law and submitting the re-issuance of their leases for State review with full compliance with the NEPA and CZMA (consistency with California's federally approved Coastal Management Program). The other option would be for the federal government to consider buying the leases back from the oil and gas industry. Finally, any federal funding mechanism for ocean and coastal management that relies on offshore oil and gas revenues must be crafted in a manner that does not provide incentives for new offshore oil and gas development.

G. TOURISM AND RECREATION

Coastal and ocean tourism and recreation are the largest economic drivers on the coast. The California Travel and Tourism Commission (CTTC) is the lead organization responsible for promoting travel to California. The Commission's structure is similar to an agricultural commodity board, because the organization is funded solely by approximately 5,000 self-assessed tourism related businesses. Tourism is one of California's top three industries, generating over $78 billion annually in direct expenditures, directly employing nearly one million Californians, and generating nearly $5 billion in annual tax revenue. As the number one destination in the U.S, it is one and one half times the size of the Florida tourism economy and five times the size of the Hawaiian tourism economy. The coast and ocean play a significant role in drawing tourism to California, and its contribution has been estimated to be as high as $14 billion annually in direct expenditures and contributing to as many as 900,000 jobs across the United States. It is in the best interests of both the California and the national economies to take actions to ensure that this tourism remains vibrant and sustainable.

Key challenges are the need to maintain the nationally recognized ocean and coast resources that people come here to the visit. It is critical that ocean waters be safe to swim in, that fish be

safe to eat, and that large recreational beaches be maintained. Future opportunities may exist to work with the tourism and recreation industries to support public service announcements to advertise the attraction of California coast and ocean, and the need for all Californians and visitors to help take care of it.

H. SALTWATER DESALINATION

In order the meet the needs of California's growing population, additional sources of water will need to be developed. According to the Department of Water Resources Desalination Task Force Report, interest in desalination as one potential water source is on the increase as demands for water supply have increased and improvements in technology have significantly reduced the cost of desalination. The report states that there is a significant potential for desalination to augment the state's fresh water supply by providing fresh water to coastal communities, especially along the South and Central Coast. According to a recent Coastal Commission report there are already 11 seawater desalination facilities existing along the California Coast and approximately 12 under consideration, including some that would be the largest in the United States. The Coastal Commission has raised concerns about the impacts of the intake and outfall structures, the disposal of brine wastes, growth inducing impacts, and some policy issues regarding the ownership of these facilities. The San Francisco Bay Conservation and Development Commission is currently updating its regulations regarding the review of these facilities in anticipation of proposals within San Francisco Bay.

Key challenges regarding desalination will be the determination of where these facilities can be sited to help meet water use needs, consistent with all coastal protection laws and water quality standards.

I. URBAN WATERFRONT RESTORATION

Exciting opportunities exist to revitalize urban coastal communities and habitats by linking habitat restoration efforts with broader socio-economic improvement projects. Redevelopment of urban waterfronts, including Brownfield sites, can be designed to support coastal-dependent industry, increased public access and tourism, and habitat restoration projects.

Key challenges include issues with cleanup of toxic sites, maintenance of historic architectural standards, preserving coastal-dependent industry, and the timing of financing and permitting of the projects under consideration.

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